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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/601,085	06/20/2003	Mukesh K. Jain	FA/254	7055

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EXAMINER	
MATZEK, MATTHEW D	
ART UNIT	PAPER NUMBER
1794	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/601,085	JAIN ET AL.	
	Examiner	Art Unit	
	MATTHEW D. MATZEK	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 May 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6,8,10-14,16-22,24-34,36-51,53-55 and 57-68* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,8,10-14,16-22,24-34,36-51,53-55 and 57-68* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 June 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Response to Arguments

1. Applicant's arguments, see Remarks, filed 5/13/2008, with respect to all rejections made in view of Hayes have been fully considered and are persuasive. The rejections of claims 1-8, 10-14, 16-22, 24-34, 36-51, 53-55 and 57-68 have been withdrawn. The combination of Maples and Hayes has been reapplied in this office action, however the particulars of the rejection have changed to no longer rely upon inherency to reject the sulfonic acid equivalent weight limitation. Claim 7 has been incorporated into claim 1 and claim 7 is now cancelled. Claims 1-6, 8, 10-14, 16-22, 24-34, 36-51, 53-55 and 57-68 are currently active.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 1-6, 8, 10-14, 16, 17, 20-22, 24-34, 36-51, 53-55 and 57-68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maples (US 6,395,383) in view of Hayes (US 6,368,710 B1).

a. Maples discloses a selectively permeable protective covering capable of transmitting high quantities of water vapor while also being capable of significantly restricting the passage of dangerous chemicals (Abstract). This invention is directed to use as a protective garment or associated accessories (Abstract). In an embodiment of this invention the chemical protective covering comprises two water vapor permeable polytetrafluoroethylene (PTFE) substrates and a polyamine polymer with amine-acid moieties specifically involving H_2SO_4 (col. 4, lines 57-65). The substrates may be woven, nonwoven or knit fabrics (col. 7, lines 38-40) and may also be porous (col. 6,

lines 13-23). The third substrate may also be made of polyethylene, polysulfone, polypropylene, polyamides, and the like (col. 7, lines 37-45). The acidic species of the polyamine polymer amine-acid moieties are preferably multi-protic and may include sulfuric and sulfurous acid (col. 9, lines 5-20). The acidic species may also be covalently bound within the polyamine polymer (col. 9, lines 12-16). The polyamine polymer will be made to form a selectively permeable sheet or layer, which in some embodiments, may be part of a composite sheet with at least one water vapor permeable substrate (col. 10, lines 12-15). A laminate construction of the applied invention is depicted in Figure 19. The applied article has a water vapor transmission rate greater than 2000 $g/(m^2*day)$ (col. 4, lines 40-44). Maples is silent as to the use of aromatic sulfonated polymers in the creation of a protective article.

b. Hayes discloses a sulfonated copolyester comprising the reaction product of one or more aromatic dicarboxylic acids, one or more aliphatic dicarboxylic acids, one or more sulfonated compounds and isosorbide resulting in a sulfonated aliphatic-aromatic copolyester (abstract). The copolyester is produced through a melt polymerization method where the aromatic dicarboxylic acid component, the aliphatic dicarboxylic acid component, the isosorbide, the sulfonated component and the optional glycol and polyfunctional branching agent are combined in the presence of a catalyst at a temperature high enough such that the monomers combine to form esters and diesters, then oligomers, and finally polymers (col. 5, lines 32-47). Preferably, the sulfonated component is a salt of sulfonated-substituted acid (col. 3, lines 55-64) and the aromatic dicarboxylic acid component is a diphenyl sulfone (col. 3, lines 1-10). The aromatic

nucleus options set forth in Hayes anticipate the claimed polymeric structure (col. 3, lines 55-60). The composition may be combined with polyphenylene sulfide (PPS) (col. 10, lines 45-55) to form laminates or multilayer films. The applied invention may be biaxially stretched to provide it with superior tensile strength, flexibility, toughness and shrinkability and increase water vapor resistance (col. 11, lines 13-27) and may be applied onto substrates to take the form of a film coating (col. 8, line 65-col. 9, line 5). The film of Hayes may be used to coat textile fabrics to provide the fabrics with protection against corrosion, the action of moisture or chemicals, impermeability to gases and liquids or increasing the mechanical strength (col. 10, lines 8-26).

c. Since Maples and Hayes are from the same field of endeavor, (i.e. sulfonated protective articles), the purpose disclosed by Hayes would have been recognized in the pertinent art of Maples.

d. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to coated Maples with the film of Hayes with the motivation of providing the article of Maples with protection against corrosion, the action of moisture or chemicals, impermeability to gases and liquids or increasing the mechanical strength. It also would have been obvious to have made the combined invention waterproof, as it is well known in the field of protective garments that it is desirable for said garments to be waterproof.

e. This applied patent fails to teach the instantly claimed sulfonic acid equivalent weight. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have made the sulfonated aromatic polymer of Hayes

et al. with the instantly claimed sulfonic acid equivalent weight, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

f. Although neither Hayes nor Maples explicitly teach the claimed feature of having the claimed chemical permeation over a 20-hour period, it is reasonable to presume that said property is inherent to the combined invention. Support for said presumption is found in the use of like materials (i.e. sulfonated aromatic polymers). The burden is upon Applicant to prove otherwise. *In re Fitzgerald* 205 USPQ 594. In addition, the presently claimed property of chemical permeation over a 20-hour period would obviously have been present one the combined product is provided.

f. Claims 2-4, 30, 31, 54 and 55 are rejected as the invention of the applied patent may be used as blankets, tents, sleeping bags, sacks, footwear, gloves, garments and the like ('383 col. 6, lines 29-32).

g. Claims 5 and 27 are rejected as the '383 invention allows for the incorporation of additional layers to the protective covering article including various textiles, felts, films, membranes, scrims, leathers and the like (col. 12, lines 4-10).

h. Claims 6 and 29 are rejected as fabric laminate may comprise multiple layers of polyamide, cellulosic, polyester and polyurethane ('383 col. 7, lines 37-62). Figure 19 of the '383 patent demonstrates the use of multiple layers of fabric (col. 12, lines 24-28).

i. Claims 21 and 36 are rejected as the polyamine polymer will be made to form a selectively permeable sheet or layer, which in some embodiments, may be part of a

composite sheet with at least one water vapor permeable substrate ('383 col. 10, lines 12-15). The '383 patent teaches the polyamine polymer composite sheet with open pore expanded PTFE substrates ('383 claim 10). Claim 22 is rejected.

j. Claims 28, 40 and 64 are rejected as laminate arrangements may consist of arrangements of polyimide layers combined with one or more additional fabric layers ('383 col. 12, lines 44-48).

k. Claims 37-39 and 60-63 are rejected as the polyimide polymer may be made to imbibe into a substrate or substrates such that the polymer fills the voids within a substrate either wholly or partially ('383 col. 11, lines 55-63). The applied patent teaches the polyimide polymer composite sheet with open pore expanded PTFE substrates ('383 claim 10).

3. Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maples (US 6,395,383) in view of Hayes (US 6,368,710 B1) as applied to claim 1 above, and further in view of Kershner et al. (US 4,824,916). Hayes fails to teach or suggest the crosslinking of the sulfonated aromatic polymer.

a. Kershner et al. teach the use of water-insoluble, cross-linked sulfonated aromatic polyamides to create a coating (Title and Abstract). The applied invention may be used to create membranes for gas separation and solvent dehydration (col. 2, lines 65-67). The sulfonated aromatic polyamides of Kershner et al. have pendant groups comprising sulfonic acid groups in anionic form (col. 6, lines 36-43). The ionically cross-linked polymers have special utility as a water resistant coating (col. 9, lines 26-31) and may be laminated to a porous substrate (col. 10, lines 50-55).

b. Since Hayes and Kershner et al. are from the same field of endeavor, (i.e. selectively permeable articles), the purpose disclosed by Kershner et al. would have been recognized in the pertinent art of Hayes.

c. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to have ionically-crosslinked the polymer of Hayes as set forth in Kershner et al. to impart the polymeric layer with increased strength.

Double Patenting

4. Claims 1-6, 8, 10-14, 16-22, 24-34, 36-51, 53-55 and 57-68 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-16, 18-47 and 49-51 of copending Application No. 10/818,214. Although the conflicting claims are not identical, they are not patentably distinct from each other because both articles are directed to protective composites made of aromatic sulfonated polymers.
This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MATTHEW D. MATZEK whose telephone number is (571)272-2423. The examiner can normally be reached on M-F, 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 571.272.1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Matthew D Matzek/
Examiner, Art Unit 1794

/Norca L. Torres-Velazquez/
Primary Examiner, Art Unit 1794